

## SENSITIVITY AS A FIDELITY INDICATOR OF UNPLUGGED IN RELATION TO ALCOHOL USE

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### Abstract

Objective: Substance use prevention program Unplugged was implemented in Slovak primary schools during the school year 2017/2018. For its effectiveness evaluation, not only its results, but also the fidelity is important. One of the key dimensions of fidelity is sensitivity – assessment of the target group to the intervention. The aim of this study was to examine the impact of sensitivity on alcohol use during the last 30 days among schoolchildren as well as the moderation effect of gender. Method: The study was a cluster randomized controlled trial with data collection immediately before the Unplugged implementation as well as right after. Solomon four group design as research design was used in this study, it means that half of the experimental group is assigned to a pre-test. Sensitivity was measured through the modified scale Youth Experience Survey 2.0 with the following subscales: intrapersonal skills; interpersonal skills; novelty seeking; integration with authority; integration with peers; social exclusion; negative influences. *Two-stage* logistic regression was applied, adjusted for gender and condition (pretest/non-pretest). Moderation effect of gender was also explored. The study involved 399 schoolchildren (45.11% boys; pretest group n=211; non-pretest group n=188). Results: In the first stage, the main effects were observed. In relation to alcohol use during the last 30 days, only few indicators of sensitivity were statistically significant: social exclusion; integration with authority and integration with peers. A higher number of schoolchildren in the experimental group without pre-test reported alcohol consumption during the last 30 days compared with schoolchildren in the group with pre-test. The model explained 13.4% of variance of the dependent variable and correctly classified 78.4% of cases. In the second stage, the interaction effects of sensitivity indicators with gender were observed. In the final model, only statistically significant interaction effects were retained. It was confirmed that relationship between integration with authority and alcohol use depends on gender. Conclusion: It was found that integration with peers increases the likelihood of alcohol use, and conversely, integration with authority reduces the likelihood of alcohol use. Moreover, schoolchildren who reported alcohol consumption reported also high social exclusion during the Unplugged. It was also found that girls with alcohol consumption reported lower level of integration with authority although girls without alcohol consumption reported higher level of integration with authority when compared to boys.

**Keywords:** *Unplugged, fidelity, alcohol use.*

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### 1. Introduction

It has been found that learning, skill development and a positive group experience tend to be the key aspects of a positive behavioural change (O'Leary-Barrett, Phil & Conrod, 2017, p. 47). Sensitivity as an assessment of the target group to the intervention stands then naturally an important component when assessing the implementation quality of a school-based drug use prevention program. During lessons when prevention program is implemented schoolchildren can actively engage in a role-play, solve problems requiring group cooperation, discuss expectations about substance use or engage in values clarification (Hansen, Fleming & Scheier, 2019). Sensitivity or schoolchildren's engagement is a very broad concept which includes, for example, motivation to participate in the intervention, willingness to participate in individual activities, perception of the attractiveness of learning materials and also perceptions of the program's features and teacher's expertise (Hansen, Fleming & Scheier, 2019).

In this study, attention was paid only to what experiences schoolchildren reported after completing the Unplugged program (Vigna-Taglianti, Galanti, Burkhart et al., 2014).

## 2. Design

This study was a randomized control trial using a Solomon four-group design.

## 3. Objective

To examine the impact of sensitivity on alcohol use during the last 30 days among schoolchildren as well as a moderation effect of gender.

## 4. Methods

### 4.1. Sample and procedure

The evaluation of the program Unplugged was conducted within an experimental design. This study is a cluster randomized controlled trial with data collection conducted immediately after program implementation. The selection of the schools was also performed with the aim of obtaining the most representative sample for the region and representative town size. The study involved 399 schoolchildren (45.11% boys; pretest group  $n = 211$ ; non-pretest group  $n = 188$ ) from 12 experimental schools.

### 4.2. Measures

#### Alcohol use

Alcohol use was measured by single item measure: “*How often (if ever) have you drunk alcohol during the last 30 days?*” The item was rated on a 4-point scale: 1 = not at all; 4 = 5 or more times (Hibell et al., 2011). For the purpose of this study, item was dichotomized (0 = not used, 1 = used / 23.1%).

#### Sensitivity

A modified version of the scale Youth Experience Survey 2.0 (YES 2.0, Hansen & Larson, 2005, Štefaňáková, 2020. ) with next subscales:

- intrapersonal skills: 11 items measuring emotional regulation, cognitive skills and problem solving;  $C\alpha = 0.894$
- interpersonal skills: 9 items measuring group process skills and prosocial norms;  $C\alpha = 0.868$
- social exclusion: 5 items measuring social exclusion and ridicule;  $C\alpha = 0.797$
- novelty seeking: 8 items measuring identity exploration, goal setting;  $C\alpha = 0.860$
- integration with authority: 4 items measuring relationships and communication with teacher and parents;  $C\alpha = 0.853$
- integration with peers: 5 items measuring diverse peer relationships;  $C\alpha = 0.751$
- negative influences: 3 items measuring substance use;  $C\alpha = 0.862$

The items were answered on a scale that provided four response options (1 = Not at all; 4 = Yes, definitely). Higher values in each dimension indicated a higher number of experiences.

### 4.3. Statistical analyses

Descriptive analysis of independent variables was calculated and differences between groups were tested by using t-tests. Logistic regression was carried out and the analysis was adjusted for gender and condition (pre-test/non-pretest). Moderation effect of gender was also explored. All analyses were carried out using SPSS 25.0.

## 5. Results

Firstly, descriptive statistics was calculated and mean values for intra and interpersonal skills, novelty seeking, integration with authority, integration with peers, social exclusion and negative influences of Unplugged among adolescents are presented (Table 1). A t-test revealed significant gender differences in the variables social exclusion and negative influences. Boys reported significantly higher level of social exclusion and negative influences (Table 2).

Next a binary logistic regression was carried out. In the first step of binary logistic regression, the main effects were observed. In relation to alcohol use during the last 30 days, only few indicators of sensitivity were statistically significant. These effects were social exclusion; integration with authority, and integration with peers (Table 3). Moreover, a higher number of schoolchildren in the experimental group without a pre-test reported alcohol consumption during the last 30 days compared to schoolchildren in the group with a pre-test (Table 3). The model explained 13.4% of variance of the dependent variable and correctly classified 78.4% of cases. In the second step, the interaction effects of sensitivity indicators with gender were observed. In the final model, only statistically significant interaction effects were retained. It was found that the relationship between integration with authority and alcohol use depends on gender. It was also found that girls with alcohol consumption reported lower level of integration with authority, although girls without alcohol consumption reported a higher level of integration with authority when compared to boys (Table 3, Figure 1).

Table 1. Descriptive characteristics of explored variables.

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Intrapersonal skills	299	33	11	44	24.58	7.09
Interpersonal skills	316	27	9	36	20.96	5.71
Social exclusion	322	15	5	20	8.11	3.24
Novelty seeking	315	24	8	32	18.62	4.98
Integration with authority	320	12	4	16	8.79	3.32
Integration with peers	315	15	5	20	11.04	3.65
Negative influences	326	9	3	12	3.88	1.82

Table 2. Descriptive characteristics of explored variables by gender.

		N	Mean	SD	t
Intrapersonal skills	Boys	243	23.24	6.27	ns
	Girls	266	23.00	6.28	
Interpersonal skills	Boys	271	19.13	4.71	ns
	Girls	277	19.48	4.58	
Social exclusion	Boys	276	8.60	3.56	3.65***
	Girls	288	7.61	2.85	
Novelty seeking	Boys	256	18.69	5.55	ns
	Girls	273	18.49	4.84	
Integration with authority	Boys	271	8.93	3.12	ns
	Girls	291	8.97	3.44	
Integration with peers	Boys	273	11.08	3.46	ns
	Girls	289	11.33	3.44	
Negative influences	Boys	282	4.38	2.28	5.26***
	Girls	299	3.56	1.42	

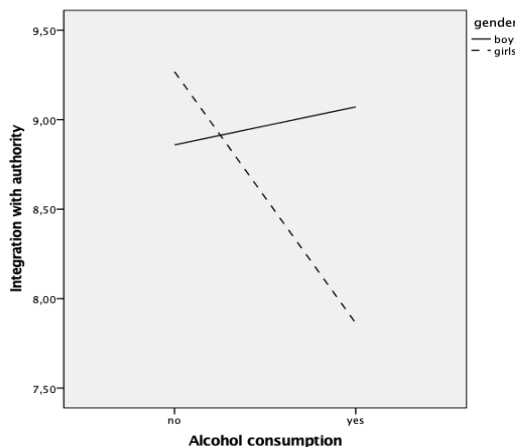
Notes: \*\*\* $p < .001$

Table 3. Binary logistic regression models estimating likelihood of reporting alcohol consumption among schoolchildren.

	Sig.	Exp(B)	95% C.I.for EXP(B)		Sig.	Exp(B)	95% C.I.for EXP(B)	
			Lower	Upper			Lower	Upper
Gender <sup>1</sup>	0.650	0.886	0.524	1.496	0.090	3.844	0.812	18.186
Pre/Post-test <sup>2</sup>	0.029	1.768	1.061	2.947	0.029	1.777	1.061	2.977
Intrapersonal skills	0.326	0.963	0.894	1.038	0.448	0.971	0.9	1.047
Interpersonal skills	0.052	0.916	0.839	1.001	0.035	0.908	0.831	0.993
Social exclusion	0.017	1.131	1.023	1.252	0.027	1.122	1.013	1.242
Novelty seeking	0.264	1.046	0.967	1.132	0.296	1.043	0.964	1.129
Integration with authority	0.020	0.881	0.793	0.98	0.726	0.974	0.844	1.126
Integration with peers	0.001	1.203	1.081	1.339	0.001	1.197	1.075	1.332
Negative influences	0.786	1.023	0.869	1.204	0.869	1.014	0.86	1.195
Integration with authority X Gender					0.048	0.844	0.714	0.999

Notes: <sup>1</sup>Boys as reference group, <sup>2</sup>The group with pre-test as reference group

Figure 1. Moderation effect of gender in the relationship between integration with authority and alcohol consumption among schoolchildren.



## 6. Discussion and conclusions

This study explored sensitivity and focused on the experiences which the schoolchildren reported after completing the Unplugged program. Positive experiences with Unplugged were assessed by using five subscales (intrapersonal skills, interpersonal skills, novelty seeking, integration with peers, integration with authority) of the modified version of the scale YES 2.0 (Hansen & Larson, 2005). An average mean scores were recorded in the subscales of positive experiences. Negative experiences were measured by two subscales (social exclusion, negative influences), however, the obtain scores were generally very low. In terms of gender differences boys tended to report a higher level of negative experiences when compared to girls.

Immediately after the Unplugged implementation, it was found that integration with peers and social exclusion increased the likelihood of alcohol use, and conversely, integration with authority reduced the likelihood of alcohol use. Moderation effect of gender was also confirmed in the relationship between alcohol use and integration with authority.

Our findings are in line with studies confirming the importance of schoolchildren's engagement in relationships with regard to substance use and alcohol use in particular (Bast et al., 2019; Hansen, Fleming & Scheier, 2019). Engagement can be improved by teachers through paying attention to students when they have something to say, making the program enjoyable to participants, encouraging students to share opinions, stimulate attentiveness, and help students to think broadly about implications of drug prevention as it affects their lives (Hansen, Fleming & Scheier, 2019). The chosen research design (Solomon four groups design) confirms the anticipated impact of pre-test in verifying the impact of Unplugged which is in line with previous findings (Köksal, 2013).

The main limitation of this research is in self-reported data. As a result schoolchildren's reports on their own substance use may be biased by provision of socially acceptable answers.

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